

Department of Biology

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The Department of Biology offers preparation for teachers of biology, for biologists in industrial and governmental employment, and for students planning for graduate study in biology or for advanced professional courses in health sciences. The program for the Biology major leads to the Bachelor of Science degree. Students choose from concentrations in Animal Biology, General Biology, Genetics and Biotechnology, Microbiology, Physiology, and Plant Biology. A minor in Secondary Education is suggested for those persons planning to teach. A minor in Biology is also available.



Curricular listings include General Education requirements in Communication, History, Humanities and/or Fine Arts, Mathematics, Natural Sciences, and Social/Behavioral Sciences categories as outlined on pages 64–67.

Major in Biology

The major in Biology requires 42 semester hours including a biology core for all concentrations of 29 semester hours:

1. BIOL 1110/1111 and 1120/1121 or, with approval of the department head, BIOL 1030/1031 with a grade of A or B plus 4 hours from upper-division courses;
2. BIOL 2230/2231, 3250/3251, 3400/3401, 3500, 4200;
3. BIOL 4110/4111 or 4210/4211 or 4500.

Other requirements include

1. MATH 1910 and one of the following: BIOL 4350/4351 or MATH 2050 or MATH 1920;
2. 12 hours of chemistry (1110/1111, 1120/1121, and 2030/2031 or 3010/3011).

All Biology majors are assigned a faculty advisor through the Biology Department Office (DSB 128). The student is responsible for seeking the assistance of the advisor. This catalog is not intended to provide the detail necessary for self-advising.

Every Biology major is required to declare a concentration area. Each area requires semester hours to be selected from a set of designated courses.

Concentration: Animal Biology

Minimum of 10 hours selected from
 BIOL 3010/3011, 3020/3021, 3040, 3050/3051, 4130/4131, 4140/4141, 4180/4181, 4220/4221, 4390/4391, 4580/4581, 4720/4721

Concentration: General Biology

Select one course from each of the following three areas:

1. BIOL 3010/3011 or 3020/3021 or 4180/4181;
2. BIOL 3030 or 4080/4081 or 4120;
3. BIOL 3040 or 3050/3051 or 4130/4131 or 4140/4141.

Concentration: Genetics and Biotechnology

BIOL 4550 and BIOL 4450 or 4460/4461 and one course selected from
 BIOL 4270, 4290, 4300/4301, 4450, 4460/4461, 4510, 4570/4571, 4720/4721

Concentration: Microbiology

Minimum of 10 hours selected from
 BIOL 3050/3051, 3210/3211, 4080/4081, 4300/4301, 4430, 4440, 4450, 4510, 4550, 4730

Concentration: Physiology

Minimum of 10 hours selected from
 BIOL 3010/3011, 3020/3021, 4110/4111*, 4130/4131, 4170, 4210/4211*, 4300/4301, 4440, 4500*, 4520, 4560/4561, 4570/4571
 *only if not used for core requirement

Concentration: Plant Biology

Minimum of 10 hours selected from
 BIOL 3030, 4060, 4080/4081, 4120, 4520

Suggested freshman and sophomore program for majors not planning to teach

FRESHMAN		SOPHOMORE	
BIOL 1110/1111 (Nat Sci)	4	BIOL 2230/2231, 3250/3251	8
BIOL 1120/1121	4	ENGL 2020 or 2030 or	
CHEM 1110/1111 (Nat Sci)	4	HUM 2610 (Hum/FA)	3
CHEM 1120/1121	4	HIST 2010, 2020, or 2030	6
ENGL 1010, 1020 (Comm)	6	CHEM 2030/2031 or 3010/3011	4
MATH 1910 (Math)	4	Social/Behavioral Sciences	3
COMM 2200 (Comm)	3	BIOL 4350/4351 or	
		or MATH 2050 or 1920*	3-4
	29	*Elective (if MATH 2050 taken)	1
		Minor	3
			31

JUNIOR		SENIOR	
Social/Behavioral Sciences	3	Humanities and/or Fine Arts	3
Humanities and/or Fine Arts	3	BIOL concentration	6
BIOL 3500	3	Minor**	6-9
BIOL 3400/3401	4	Upper-division BIOL elective	4
BIOL 4110/4111, 4210/4211, or 4500	4	Electives**	9
BIOL concentration	4	BIOL 4200	2
Minor**	6		30
Elective**	3		
	30		

*See advisor for additional choices in this area.

**Must include 16 hours of upper-division classes.

Teacher Licensure

Students seeking a license to teach in secondary schools (grades 7-12) must complete (1) a major in the subject they intend to teach, (2) a minor in Secondary Education, and (3) additional teacher licensure requirements.

Secondary Education Minor Requirements

Students must contact their Secondary Education minor advisors for approval of appropriate courses.

NOTE: Please see Department of Educational Leadership on page 166 for Secondary Education minor requirements.

Biology Major Requirements for Licensure

Complete the following General Biology concentration:

BIOL 1110/1111, 1120/1121, 8 hours

BIOL 2230/2231, 4 hours

BIOL 3250/3251, 4 hours

BIOL 3400/3401, 4 hours

BIOL 3500, 3 hours

BIOL 4200, 2 hours

Select one: BIOL 3010/3011, 4 hours; BIOL 3020/3021, 4 hours; BIOL 4180/4181, 4 hours

Select one: BIOL 3030, 4 hours; BIOL 4080/4081, 4 hours; BIOL 4120, 4 hours; BIOL 4520, 4 hours

Select one: BIOL 3040, 3 hours; BIOL 3050/3051, 3 hours; BIOL 4130/4131, 4 hours; BIOL 4140/4141, 4 hours

Select one: BIOL 4110/4111, 4 hours; BIOL 4210/4211, 4 hours; BIOL 4500, 4 hours

Biology electives to total 42 hours minimum.

Minor in Biology

There are two options for the minor in Biology:

1. 19 semester hours in biology including one year of freshman biology or equivalent and BIOL 2230/2231 and 3250/3251.
2. 19 semester hours in biology including BIOL 1030/1031 with a grade of A or B and 4 hours chosen from upper-division courses and approved by the department head and BIOL 2230/2231 and 3250/3251.

Each option requires at least one upper-division course to be taken at MTSU. A 2.00 GPA is required for courses satisfying the minor in Biology.

Four or more semester hours of freshman-level General Education equivalent biology in transfer credits may be substituted for BIOL 1030/1031.

The Department of Biology participates in an interdisciplinary major in Environmental Science and Technology in conjunction with Agribusiness and Agriscience, Chemistry, Engineering Technology, and Geosciences. A complete description of this program is found on page 80.

Course in General Education Biology [BIOL]

See back of catalog for course descriptions.

Courses in Biology [BIOL]

See back of catalog for course descriptions.

Gulf Coast Research Laboratory

MTSU is an affiliate of the Gulf Coast Research Laboratory (GCRL) in Ocean Springs, Mississippi. Adjacent to the Mississippi Sound, the GCRL promotes student education and research opportunities in marine biology. A number of courses are offered each summer and the credits transferred to MTSU. For information on attendance or current course offerings, consult the Biology Department chair or visit the GCRL Web site at www.usm.edu/gcrl/summer_field/index.php.

Honors College

The Department of Biology offers the following courses in Honors:

BIOL 1030/1031 (Fall/Spring Semester)

BIOL 1110/1111 (Fall/Spring Semester)

BIOL 1120/1121 (Spring Semester)

BIOL 2230/2231 (Spring Semester)

BIOL 3160 (Spring Semester of even-numbered years)

BIOL 3250/3251 (Fall Semester)

Graduate Study

The Master of Science is offered in Biology. Requirements for this degree and a list of the courses offered for graduate credit are published in the Graduate Catalog.